

## SECTION 138

### STRUCTURAL ALUMINUM PLATE FOR PIPE, ARCHES, PIPE ARCHES AND BOX CULVERTS

#### 138.1 GENERAL

138.1.1 Structural aluminum plate for pipe, arches, pipe arches, and box culverts shall be of the size, gauges and dimensions on the construction plans.

138.1.2 Corrugated metal pipe and arches shall only be used for transverse roadway culvert drainage applications.

#### 138.2 REFERENCES

##### 138.2.1 ASTM

A 153	B 209
A 193	B 308
A 307	

##### 138.2.2 AASHTO M 219

#### 138.3 MATERIALS

138.3.1 Plates shall be fabricated from aluminum alloy 5052-H141, with chemical properties per ASTM B 209. Mechanical properties shall conform to AASHTO M 219.

138.3.2 Ribs shall be fabricated from aluminum alloy 6061-T6, with properties per ASTM B 209 and B 308.

138.3.3 Nuts and bolts and other special securing devices shall be galvanized steel and shall meet the standards of ASTM A 307 with the zinc coating in compliance with ASTM A 153.

138.3.4 Stainless steel nuts, bolts, and other securing items shall comply with ASTM A 193.

138.3.5 The shape of the nuts, bolts, and other special securing items shall be the same geometric configuration as recommended by the manufacturer of the plates.

138.3.6 All bolts or other special securing items, which require a bend, shall be bent to final position before galvanizing operation.

#### 138.4 INSTALLATION

Structural aluminum plate structures shall be installed in accordance with the manufacturer's recommendations and shop drawings, and construction plans.

#### 138.5 MEASUREMENT AND PAYMENT

138.5.1 The measurement of structural plate structures will be by the linear foot measured along the centerline of the culvert or pipe to the nearest foot.

138.5.2 Structural plate structures with beveled or skewed ends will be measured along the invert to the nearest foot.

138.5.3 Payment shall be made at the unit price per linear foot per type of structure, as specified in the Bid Proposal.